REMARKS

Claim Rejections

Claims 1-11 and 13-16 were rejected under 35 USC 103 as unpatentable over Sankey and Tipman as in the prior office action; claims 12 and 17 were rejected with the addition of the Wu reference, again as in the prior office action. The Response to Arguments indicates that claim 1 does not distinguish over the Sankey distillation units and that Tipman uses diluents with similar compositions. Applicants respectfully traverse the rejection in view of amended claims 1 and 17, and the following remarks.

Flash Separation

Claim 1 specifically recites "a two-stage flash separation process...." This term is clearly defined in the specification so as to distinguish over the more costly and impractical fractionation processes. The significant (especially cost) differences between the two are set forth in paragraphs **[0006, 0008, 0009,** and **0030-0033]**.

It would not have been obvious to the skilled artisan to use the less exact/precise flash process of the invention over a distillation/fractionation process because of: (1) the heavy feed characteristics of bitumen as detailed in paragraph **[0030]**, with the attendant stream content overlap as given in paragraph **[0008]**; and because (2) the skilled artisan has been motivated to meet the requirements of providing a diluted bitumen suitable for transportation to a refinery or elsewhere for conversion to sweet light crude, etc.

Gas Plant Diluent Separation

The independent claims have been amended for clarity to recite the makeup of the gas plant diluent, thereby distinguishing from the Natural Gas Condensate ("NGC") of Tipman at column 11, Table 10, and Example X. It would not have been obvious to the skilled artisan to use the lower paraffins content material of the invention because, as demonstrated by Tipman, the NGC was required to break the water emulsion in the bitumen froth of the prior art process to achieve water removal as required for the desired products.

Reconsideration Requested

Sankey

In Sankey the co-authors (current inventors) concentrated on partially upgrading bitumen by distilling the bitumen into a lighter overhead fraction and a heavier bottom fraction. The overhead fraction was for later conversion to a sweet light crude by hydrotreating, and the bottom fraction was emulsified to be used as a fuel. The operations were directed to diluted bitumen transported from the production site by a pipeline to a refinery location (page 269, abstract lines 2 and 3) thousands of miles away from the bitumen production facility. Since the intended customers for the emulsified fuel were power utilities (page 269, last sentence), the successful implementation of the technology was contingent upon customers' needs and facilities (page 270, paragraph 2). Likewise, a number of potential user refineries needed to be surveyed (page 270, paragraph 4) to establish the acceptance of overhead product. Such market dynamics proved to be a stumbling block to implementation of such technology. This explains why it has not been implemented even ten years after publication of the paper.

By sharp contrast, the **integrated** process for bitumen recovery, separation, and emulsification for steam generation is intended for location directly in the bitumen production facility. Both the lighter overhead fraction and the emulsified bottom fraction from this process are utilized in the production site without being influenced by market dynamics and customer acceptance issues. Unlike Sankey, the separation process to make lighter overhead and heavier bottom fraction in the invention does not use atmospheric or vacuum distillation units, which are available in the refineries but are very expensive to build in a production facility. Contrary to conventional industry thinking that fine distillation cuts were required for desired products and for transportation, flash separation provides a cheaper separation process at the production site.

Tipman

Alternatively, the invention teaches the use of gas plant condensates not previously considered for separating asphaltenes in the refinery application proposed by Sankey. However, the gas plant diluent is readily available in the bitumen production facility. Use of the gas plant condensate represented a significant economic advantage over the prior art process.

Tipman disclosed the use of predominantly paraffinic solvent, including NGC, not to separate bitumen into a lighter and a heavier fraction, but to break the water emulsion in the bitumen froth (column 3, lines 1-6). The froth in Tipman is from a non-steam based mining and extraction process for mineable tar sands in Athabasca. The present invention, by sharp contrast is for a steam-based recovery process in a non-mineable reservoir like the Cold Lake field in Alberta. The Tipman objective is to provide a new method for cleaning the bitumen froth (an emulsion consisting of bitumen, gas (or air), solids, water) produced by a water extraction process, which method is effective to better reduce the water plus solids content, preferably to about 0.5 wt.% or less (column 2, last paragraph). Consistent with this objective, Figures 1-4 in Tipman disclose residual water in the oil phase. The skilled artisan with Tipman before him would be led to use and then recover a high paraffins content stream such as disclosed by Tipman, contrary to the economic advantage of the present invention.

Wu

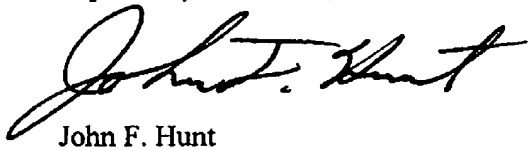
Wu takes advantage of the steam distillation that naturally occurs in steam flooded production wellbores (column 2, lines 62-68) to separate the lighter hydrocarbon from the produced oil and then inject it with steam for the sole purpose of enhancing the recovery of bitumen. Wu does not teach the skilled artisan what to do with the heavier hydrocarbon which will be now be more difficult to transport because of higher viscosity. Wu also does not address the need to find an alternative for the now scarce and costly natural gas fuel, a major concern for bitumen producers. Furthermore, the steam distillation in Wu is on the entire water-bitumen mixture whereas in the present invention only the oil is flashed after the water has been removed. This reduces the load on the separator and eliminates the need for a condenser to separate the water.

The examiner correctly states that Wu does not specifically mention treating the water to remove contaminants. This would be a significant issue for an integrated process in which recycling of water is important to make the process economic. Wu also failed to recognize the opportunity for reducing the fuel cost of a steam-based recovery process by utilizing the heavier fraction to make steam.

The amendments to the claims merely represent incorporation of the language of prior claim 6, now cancelled, into the independent claims. Accordingly, no new issues are presented for examination and the claims are in condition for allowance.

In view of the above amendments and arguments, reconsideration and allowance of the claims as amended is requested.

Respectfully submitted,



John F. Hunt
Reg. No. 29,394

c/oExxonMobil Upstream Research Company
P.O. Box 2189
CORP-URC-SW348
Houston, Texas 77252-2189

Certificate of Facsimile Transmission

I hereby certify that this correspondence is being transmitted via facsimile to Examiner Singh, United States Patent and Trademark Office at (571) 273-8300 on June 22, 2006.

Margaret Gnewuch

Margaret Gnewuch